

5'	9	18	27	36	45	54
NGA CGC AGG CGC AAC CCA CGG CTG CTG CGG GGA TCC TTG TGG CCC TTC CGG TCG						
63	72	81	90	99	108	
ATG GAA CCA ATC CGT GCA CAG AGA AGC GGG GCG AAC TGA GGC GAG TGA AGT GGA						
117	126	135	144	153	162	
CTC TGA GGG CTA CCG CTA CCG CCA CTG CTG CCG CAG GGG CGT GGA GGG CAG AGG						
171	180	189	198	207	216	
GCC GCG GAG GCC GCA GTT GCA AAC ATG GCT CAG AGC AGA GAC GGC GGA AAC CCG						
		M	A	Q	S	R
						D
						G
						N
						P
225	234	243	252	261	270	
TTC GCC GAG CCC AGC GAG CTT GAC AAC CCC TTT CAG GAC CCA GCT GTG ATC CAG						
F	A	E	P	S	E	L
						D
						N
						P
						F
						A
						T
						L
						D
						V
						Y
						N
						P
						F
						E
						T
279	288	297	306	315	324	
CAC CGA CCC AGC CGG CAG TAT GCC AGC CTT GAC GTC TAC AAC CCT TTT GAG ACC						
H	R	P	S	R	Q	Y
						A
						T
						L
						D
						V
						Y
						N
						P
						F
						E
						T
333	342	351	360	369	378	
CGG GAG CCA CCA CCA GCC TAT GAG CCT CCA GCC CCT GCC CCA TTG CCT CCA CCC						
R	E	P	P	A	Y	E
						P
						A
						P
						L
						P
						P
						P
387	396	405	414	423	432	
TCA GCT CCC TCC TTG CAG CCC TCG AGA AAG CTC AGC CCC ACA GAA CCT AAG AAC						
S	A	P	S	L	Q	C
						P
						S
						R
						K
						L
						S
						P
						T
						E
						P
						K
						N

FIGURE 1A

441	TAT GGC TCA TAC AGC ACT CAG GCC TCA GCT GCA GCC ACA GCT GAG CTG CTG	450	459	468	477	486
	Y G S Y S T Q A S A A A T A E L L					
495	AAG AAA CAG GAG GAG CTC AAC CGG AAG GCA GAG TTG GAC CGA AGG GAG CGA	504	513	522	531	540
	K K Q E E L N R K A E E L D R R E R					
549	GAG CTG CAG CAT GCT GCC CTG GGG GGC ACA GCT ACT CGA CAG AAC AAT TGG CCC	558	567	576	585	594
	E L Q H A A L G G T A T R Q N N W P					
603	CCT CTA CCT TCT TTT TGT CCA GTT CAG CCC TGC TTT TTC CAG GAC ATC TCC ATG	612	621	630	639	648
	P L P S F C P V Q Q P C F F Q D I S M					
657	GAG ATC CCC CAA GAA TTT CAG AAG ACT GTA TCC ACC ATG TAC CTC TGG ATG	666	675	684	693	702
	E I P Q E F Q Q K T V S T M Y L W M					
711	TGC AGC ACG CTG GCT CTT CTC CTG AAC TTC CTC GGC TGC CTG GCC AGC TTC TGT	720	729	738	747	756
	C S T L A L L L L N F L A C L A S F C					
765	GTG GAA ACC AAC AAT GGC GCA GGC TTT GGG CTT TCT ATC CTC TGG GTC CTC CTT	774	783	792	801	810
	V E T N N G A G G F G L S I L L W V L L					

FIGURE 1B

819	TTC ACT CCC TGC TCC TTT GTC TGC TGG TAC CGC CCC ATG TAT AAG GCT TTC CGG	828	837	846	855	864
	F T P C S F V C W Y R P M Y K A F R					
873	AGT GAC AGT TCA TTC AAT TTC TTC TTC TTC ATT TTC TTC GTC CAG GAT	882	891	900	909	918
	S D S S F N F F F F F I F F V Q D					
927	GTG CTC TTT GTC CTC CAG GCC ATT GGT ATC CCA GGT TGG GGA TTC AGT GGC TGG	936	945	954	963	972
	V L F V L Q A I G I P G W G F S G W					
981	ATC TCT GCT CTG GTG GTG CCG AAG GGC AAC ACA GCA GTA TCC GTG CTC ATG CTG	990	999	1008	1017	1026
	I S A L V V V P K G N T A V S V L M L					
1035	CTG GTC GCC CTG CTC TTC ACT GGC ATT GCT GTG CTA GGA ATT GTC ATG CTG AAA	1044	1053	1062	1071	1080
	L V A L L F T G I A V L G I V M L K					
1089	CGG ATC CAC TCC TTA TAC CGC CGC ACA GGT GCC AGC TTT CAG AAG GCC CAG CAA	1098	1107	1116	1125	1134
	R I H S L Y R R T G A S F Q K A Q Q					
1143	GAA TTT GCT GCT GGT GTC TTC TCC AAC CCT GCG GTG CGA ACC GCA GCT GCC AAT	1152	1161	1170	1179	1188
	E F A A G V F S N P A V R T A A A N					

FIGURE 1C

FIGURE 1D

1197	1206	1215	1224	1233	1242
GCA GCC GCT GGG GCT GCT GAA AAT GCC TTC CGG GCC CTG ACT GGG					
A A A G A A E N A F R A P					
1251	1260	1269	1278	1287	1296
ATG CCC TGG CCC TGC TAC TTG AGG GAG CTG ACT TAG CTC CCG TCC CTA AGG TCT					
1305	1314	1323	1332	1341	1350
CTG GGA CTT GGA GAG ACA TCA CTA ACT GAT GGC TCC TCC GTA GTG CTC CCA ATC					
1359	1368	1377	1386	1395	1404
CTA TGG CCA TGA CTG CTG AAC CTG ACA GGC GTG TGG GGA GTT CAC TGT GAC CTA					
1413	1422	1431	1440	1449	1458
GTC CCC CCA TCA GGC CAC ACT GCT GCC ACC TCT CAC ACG CCC CAA CCC AGC TTC					
1467	1476	1485	1494	1503	1512
CCT CTG CTG TGC CAC GGC TGT TGC TTC GGT TAT TTA AAT AAA AAG AAA GTG GAA					
1521					
CTG GAA CTG 3'					

FIGURE 1D

9	18	27	36	45	54
5' NCC GGA AGT GGA GGG TCT ACA CGA AGC GCC GCT GGG TCT GGG TGC CCG GAG GCA					
63	72	81	90	99	108
GCA GCG TTC GCG GAG TTC GCC CGC TGG CCC CCG ATC ACC ATG TCG GCT TTC GAC					
				M S A F D	
117	126	135	144	153	162
ACC AAC CCC TTC GCG GAC CCA GTG GAT GTA AAC CCC TTC CAG GAT CCC TCT GTG					
T N P F A D P V D V N P F Q D P S V					
171	180	189	198	207	216
ACC CAG CTG ACC AAC GCC CCG CAG GGC GGC CTG GCG GAA TTC AAC CCC TTC TCA					
T Q L T N A P Q G G L A E F N P F S					
225	234	243	252	261	270
GAG ACA AAT GCA GCG ACA ACA GTT CCT GTC ACC CAA CTC CCT GGG TCC TCA CAG					
E T N A A T T V P V T Q L P G S Q					
279	288	297	306	315	324
CCA GCG GTT CTC CAG CCA TCA GTG GAA CCA ACC CAG CCG ACC CCC CAG GCC GTG					
P A V L Q P S V E P T Q P T P Q A V					
333	342	351	360	369	378
GTG TCT GCA GCC CAG GCA GGC CTG CTC CGG CAG CAG GAA GAA CTG GAC AGG AAA					
V S A A Q A G L L R Q Q E E L D R K					

FIGURE 2A

387	GCT GCC GAG CTG GAA CGC AAG GAG CGG GAG CTG CAG AAC ACT GTA GCC AAC TTG	405	414	423	432
	A A E L E R K E R E L Q N T V A N L				
441	CAT GTG AGA CAG AAC AAC TGG CCC CCT CTG CCC TCG TGG TGC CCT GTG AAG CCC	459	468	477	486
	H V R Q N N W P P L P S S W C P V K P				
495	TGC TTC TAT CAG GAT TTC TCC ACA GAG ATC CCT GCC GAC TAC CAG CGG ATA TGC	513	522	531	540
	C F Y Q D F S T E I P A D Y Q R I C				
549	AAG ATG CTC TAC TAT CTG TGG ATG TTG CAT TCA GTG PCT CTG TTT CTG AAC CTG	567	576	585	594
	K M L Y Y L W M L H S V T L F L N L				
603	CTT GCC TGC CTG GCC TGG TTC TCG GGC AAC AGC TCC AAG GGA GTG GAC TTT GGC	621	630	639	648
	L A C L A W F S G N S S K G V D F G				
657	CTC TCC ATC CTG TGG TTT CTG ATC TTC ACT CTC CCC TGT GCC TTT TGT TGG TAC	675	684	693	702
	L S I L L W F L I F T P C A F L C W Y				
711	CGA CCC ATC TAT AAG GCC TTT AGG TCC GAC AAC TCT TTC AGC TTC TTT GTG TTC	729	738	747	756
	R P I Y K A F R S D N S F S F F V F				

FIGURE 2B

765	TTC TTT GTA TTT TTT TGT CAA ATA GGG ATC TAC ATC ATC CAG TTG GTT GGC ATC	810
F F V	F C Q I G I Y I I Q L V G I	
819	CCT GGC CTG GGG GAC AGC GGT TGG ATT GCA GCC CTG TCT ACA CTG GAT AAT CAT	864
P G L G	D S G W I A A L S T L D N H	
873	TCC CTG GCC ATA TCA GTC ATC ATG ATG GTG GTG GCT GGC TTC ACC CTC TGT	918
S L A I	S V I M V V A G F F T L C	
927	GCC GTG CTC TCA GTC TTC CTC CTG CAG CGG GTG CAC TCC CTC TAC CGA CGG ACA	972
A V L S	V F L L Q R V H S L Y R T	
981	GGG GCC AGC TTC CAG CAG GCC CAG GAG TTT TCC CAG GGC ATC TTC AGC AGC	1026
G A S F	Q Q A Q E E F S Q G I F S S	
1035	AGA ACC TTC CAG AGA GCT GCT TCA TCT GCT GCC CAA GGA GCC TTC CAG GGG AAT	1080
R T F H	R A A S S A A Q G A F Q G N	
1089	TAG TCC TCC TCT CTT CTC TCC CCC TCA GCC TTT CTC TCG CCT GCC TTC TGA GCT	1134
	1098 1107 1116 1125	

FIGURE 2C

1143	1152	1161	1170	1179	1188
GCA CTT TCC GTG GGT GCC TTA TGT GGT GGT TGT GCC CAG CAC AGA CCT GGC					
1197	1206	1215	1224	1233	1242
AGG GTT CTT GCC GTG GCT CTT CCT CCT CCC TCA GCG ACC AGC TCT CCC TGG AAC					
1251	1260	1269	1278	1287	1296
GGG AGG GAC AGG GAA TTT TTT CCT CTA TGT ACA AAA AAC AAA GCT CTC					
1305	1314	1323	1332	1341	1350
TTT CCT TCT CTG GTG ATG GTT TGG TAG GAT TCT TTT GTC TCT GGA AGC AGT GGG					
1359	1368	1377	1386	1395	1404
ACT GAA GTT CTC TTC GTC CTG TGC ACA CAC AGA CAC CCC CAC ACA GTT GGG ATC					
1413	1422	1431	1440	1449	1458
ACA GGC TGA COT GGG CCC ATC CCA GCT GGA GCT TTC TGC CAG GGT CCT GGG CCT					
1467	1476	1485	1494	1503	1512
TGA CTC CCC CAC CCT GCA GGC CTG GCC TGA ATC TGG CTT CTT AGA CAC AGC CCA					
1521	1530	1539	1548	1557	1566
GTC CTT CCT GCC TGG GCT GGG AAT AAG CCT CTC ACA GGT TCT GGT GGA CAG ATC					
1575	1584	1593	1602	1611	1620
TGT TCC CCA GGT CAC TCC AGT GGT CTC CAG GCT TCC AGA GAA GGC TGG TTG CCT					

FIGURE 2D

1629	CAA GCT CTT CTC	1638	TGC CTC ATA AAC GGA TCC AGA GAA GGC TGG TTG CCT TAA GCT	1665	1674
1683	CTT CCC TGC CTC	1692	GTG TTC CTG AGA AAC GGA TTA ATA GCC CTT TAT CCC CCT GCA	1719	1728
1737	CCC TCC TGC AGG	1746	GGA TGG CAC TTT GAG CCC TCT GGA GCC CTC CCC TTG CTG AGC	1773	1782
1791	CTT ACT CTC TTC	1800	AGA CTT TCT GAA TGT ACA GTG CCG TTG GTT GGG ATT TGG GGA	1827	1836
1845	CTG GAA GGG ACC	1854	AAG GAC ACT GAC CCC AAG CTG TCC TGC CTA GCG TCC AGC GTC	1881	1890
1899	TTC TAG GAG GGT	1908	GGG GTC TGC CTG TCC TGG TGT GGT TGG TTT GGC CCT GTT TGC	1935	1944
1953	TGT GAC TAC CCC	1962	CCC CCC TCC CCG AAC CGA GGG ACG GCT GCC TTT GTC TCT GCC	1989	1998
2007	TCA GAT GCC ACC	2016	TGC CCC GCC CAT GCT CCC CAT CAG CAG CAT CCA GAC TTT CAG	2043	2052
2061	GAA GGG CAG GAC	2070	CAG CCA GTC CAG AAC CGC ATC CCT CAG CAG GGA CTG ATA AGC	2097	2106

FIGURE 2E

Sequence

2115	2124	2133	2142	2151	2160
CAT CTC TCG GAG GGC CCC CTA ATA CCC AGT GGA GTC TGG TTC ACA CCC TGG GGG					
2169	2178	2187	2196	2205	2214
GTG TGT CAC TGT GAT GGG ACA CGT AGG AGT CCA CCC TTA AAA CCA GCA CCC TGT					
2223	2232	2241	2250	2259	2268
CCC TCG AGG CTG CCG AGT GGG TGT GTG GAC TGG GGT GCC TTC CCA CAA AAC TAG					
2277	2286	2295	2304	2313	2322
CCT CCG GCT CTG GGC CCG AGA CAG CCG CAG GCC CCA GCC ACT GAA TGA TAC TGG					
2331	2340	2349	2358	2367	2376
CAG CGG CTG GGG TTT TAT GAA CTC CTT TCT GGT ATT TTT TCC CCT CTA TGT ACA					
2385	2394	2403	2412	2421	2430
AAT GTA TAT GTT ACG TCT CAA TTT TTG TGC TTA AGT AAA AAT AAA AAC ATT TTC					

AGA C 3'

FIGURE 2F

1	M	A	Q	S	R	D	G	G	N	P	F	A	E	P	S	E	L	D	N	P	F	Q	D	P	A	V	I	Q	H	R	P	S	R	Q	Y	A	T	L	D	V	980615
1	M	S	A	F	-	-	D	T	N	P	F	A	D	P	-	V	D	V	N	P	F	Q	D	P	S	V	T	Q	L	T	N	A	P	Q	-	G	L	A	E	412453	
1	M	S	D	E	-	-	D	S	N	P	F	A	D	P	-	D	L	N	N	P	F	K	D	P	S	V	T	Q	V	T	R	N	V	P	-	P	G	L	D	E	GI 487057
41	Y	N	P	F	E	T	R	E	P	P	A	Y	E	P	P	A	P	L	P	P	S	A	P	S	L	Q	P	S	R	K	L	S	P	T	E	P	980615				
37	F	N	P	F	S	E	-	-	T	N	A	-	-	-	A	T	V	P	V	T	Q	L	P	G	S	S	-	Q	P	A	V	L	Q	P	S	V	E	P	412453		
37	Y	N	P	F	S	D	S	R	T	P	P	-	-	-	P	G	G	V	K	M	P	N	V	P	-	N	T	-	Q	P	A	I	M	K	P	T	E	H	GI 487057		
81	K	N	Y	G	S	Y	S	T	Q	A	S	A	A	A	T	A	E	L	L	K	Q	E	E	L	N	R	K	A	E	L	D	R	R	E	R	E	L	980615			
70	T	Q	P	T	-	-	P	Q	A	V	V	S	A	-	A	Q	A	G	L	L	R	Q	Q	E	E	L	D	R	K	A	A	E	L	E	R	K	E	R	E	L	412453
71	P	A	Y	T	-	-	Q	I	T	K	E	H	A	L	A	Q	A	E	L	L	K	R	Q	E	E	L	E	R	K	A	A	E	L	D	R	R	E	R	E	M	GI 487057
121	Q	H	A	A	L	G	G	T	A	T	R	Q	N	N	W	P	P	L	P	S	F	C	P	V	Q	P	C	F	E	Q	D	I	S	M	E	I	P	Q	E	F	980615
107	Q	N	T	-	V	A	N	L	H	V	R	Q	N	N	W	P	P	L	P	S	W	C	P	V	K	P	C	F	Y	Q	D	F	S	T	E	I	P	A	D	Y	412453
109	Q	N	L	-	-	S	Q	H	G	R	K	N	N	W	P	P	L	P	S	N	F	P	V	G	P	C	F	Y	Q	D	F	S	V	D	I	P	V	E	F	GI 487057	
161	Q	K	T	V	S	T	M	Y	Y	L	W	M	C	S	T	L	A	L	L	N	F	L	A	C	L	A	S	F	C	V	E	T	N	N	G	A	G	F	G	980615	
146	Q	R	I	C	K	M	L	Y	Y	L	W	M	L	H	S	V	T	L	F	L	N	L	L	A	C	L	A	W	F	S	G	N	S	S	K	G	V	D	F	G	412453
146	Q	K	T	V	K	L	M	Y	Y	L	W	M	F	H	A	V	T	L	F	L	N	I	F	G	C	L	A	W	F	C	V	D	S	S	R	A	V	D	F	G	GI 487057

FIGURE 3A

201	L S I L W	V L L F	T P C S	F V C W	Y R P M	Y K A F R S	D S S F	N F F V F F F	I F	980615
186	L S I L W	F L I F	T P C A	F L C W	Y R P I	Y K A F R S	D N S F	S F F V F F F	V F	412453
186	L S I L W	F L L F	T P C S	F V C W	Y R P L	Y G A F R S	D S S F	R F F V F F F	Y	GI 487057
241	F V Q D	V L F V	L Q A I	G I P G	W G F S	G W I S	A L V -	V P K G	N T A V S V	L M
226	F C Q I	G I Y I	Q L V G	I P G L	G D S G	W I A A	L S T L	D N H S	L A I S V I	M
226	I C Q F	A V H V	L Q A A	G F H N	W G N C	G W I S	S L T G	L N K N	- I P V G I M	M
280	L L V A	L L F T	G I A V	L G I V	M L K R	I H S L	Y R R T	G A S F	Q K A Q Q E	F A
266	M V V A	G F F T	L C A V	L S V F	L L Q R	V H S L	Y R R T	G A S F	Q Q A Q E E	F S
265	I I I A	A L F T	A S A V	I S L V	M F K K	V H G L	Y R T T	G A S F	E K A Q Q E	F A
320	A G V F	S N P A	V R T A	A A N A	A A - - - -	G A A E	N A F R	A P		980615
306	Q G I F	S S R T	F H R A	A A S - - - -	S A A Q	G A F Q	G N			412453
305	T G V M	S N K T	V Q T A	A A N A	A S T A	A T S A	A Q N A	E K G N	Q M	GI 487057

FIGURE 3B